



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

INTRODUCTION TO A STUDY OF BIRD LIFE.

BY EDWARD WILLIAM AND BROTHER ALPHONSUS, C. S. C.

Very early in the life of every child that is brought into the presence of nature, there springs up in his heart a sympathy and love for the beautiful creatures that a kind Creator has made to fly and to sing. Especially is this true of the more fortunate children who live in the country, and early learn the secrets that nature reveals to them. As the country boy grows up he insensibly finds in everything that meets his eyes, in the beautiful panorama spread out before him, countless charms to quicken his fancy and strengthen his mind. In fact, he enjoys with nature a true companionship, but especially is this so with his feathered friends, the birds.

While enjoying this delightful companionship, our country-bred boy is forming one of the most useful and necessary habits—that of observation. First he sees things, and gradually comes to know much that is suggested by what he observes. Then he develops the power of comparing things, and here he enters a region that proves exceedingly rich in storing his mind with the lore of nature, and is yet more fruitful in exercising and perfecting his mental faculties. And among all that he sees and hears, nothing appeals to him more keenly than the multitudinous bird life by which he is surrounded.

After observing for some time, our country boy has become a youth, and with his mind developed by the best of teachers—nature, he enters high school, where his intellect must meet many others. Already so well equipped in some ways, he eagerly takes part in the discussion of the class-room, and in due time will, if endowed with good talents, easily be among the best of his classmates. Here he shines in the study of natural history, and his teacher is quite certain to trust any of his observations. Familiarity with manuals on bird life will soon make him a competent ornithologist. From the school to the specialists' club is but an easy step for our young naturalist, and his membership is welcome even to the experienced ornithologists whom he there meets.

But let us retrace our way a little, and note more carefully how our young ornithologist learned to identify so many birds.

At first he observed the migration and habits of the more common species, and either gave them names himself, or used those that other farm boys had coined. Often these names would not be correct—that is, they would not be authorized by the standard bird books—and sometimes the same name might be used for different species in different localities. For instance, in some places the Goldfinch is called by the boys the Wild Canary; in other parts of the country this name is given to the Yellow Warbler. Another species with many popular names is known by the uninitiated as the Yellow-hammer, the most familiar names to ornithologists being Flicker, High-hole, or Golden-winged Woodpecker. But at first, names are unimportant, the main thing is to be sure of knowing all the species that are found in one's locality at the various seasons of the year. In this respect, our farm boy is very keen, and will in a surprisingly short time be well acquainted even with the shiest bird that appears in the blackberry bushes in his father's garden.

For a long time our young naturalist has depended entirely upon his quick and keen vision in all his observations; but after becoming a member of the local ornithological club, he finds his associates all use field glasses for their observations. Occasionally, too, when desirous of securing a rare specimen, or one that is rare at a certain season of the year, they resort to using a gun to take the coveted prize. So our aspiring ornithologist easily follows the lead of his older scientific friends, and does a little shooting, and much observing with his field glasses. By these means he succeeds in adding a number of warblers or fly-catchers, which he had not previously identified, to his list of local birds.

The seasons of the year come and go with their wonted regularity, and each one finds our naturalist unabating in his devotion to the delightful study of ornithology. Ten years make many changes in the life around us—in persons no less than in things. At the end of this period our unsophisticated farm boy has become a well set-up and respected citizen in one of the university towns of Indiana. And the reader will not be surprised to learn that one who early gave so much promise of developing into a man of intelligence and integrity, after graduating from his university, is now a member of its faculty, holding the position of assistant instructor in zoology. From this on, we shall let the young professor speak for himself, and give the later story of his career as an ornithologist.

It is with pleasure that I begin to relate to you my experiences in the study of bird life. Having been introduced to you by my esteemed friend and fellow-naturalist, Brother Alphonsus, of Notre Dame University, I shall proceed without further allusion to the early part of my career. I soon found that to do efficient work as an ornithologist, I would have to make three divisions of my subject—namely, migration, distribution, and habits of birds. I also found that I could not simultaneously pursue all of the three divisions, for a different method would be required—at least to study the habits of birds. For this purpose the observer must not move much, but must patiently pick up the many interesting things about the life of a bird that are revealed to the careful and persistent student. In fact, ten years would not be too long to devote, either to the study of the habits, or the migration and distribution of our birds. I began with the latter division for a number of reasons, mainly these: in studying the migration and distribution of birds, the observer has better opportunities to add new species to his ever growing list; he also gets needed exercise from the constant walking that is necessitated to find as many migrants as possible.

Incidentally, I may say, the student of bird life receives a great deal of pleasure in his long and solitary rambles—with only nature for his companion. Sounds and sights attract him everywhere, and his power of attention is wonderfully strengthened. He knows too, from experience, where to look for the many different species, which are not all found in the same places. Here again there is introduced the element of variety; some days, too he finds more species than on others.

I think it helpful at the beginning of this paper to give my readers some idea of the character of the land near my university home. The general appearance of the country is part wood and part prairie; in the immediate vicinity of the buildings, there are two small lakes—formerly one. One of these lakes (that nearest the St. Joseph River, into which it has an outlet) is lower than the other, giving the feature of marsh land. The St. Joseph River, one mile west, is a rapid stream, quite wide, and well-wooded, attracting such species as the Cardinal, Towhee, and Red-eyed Vireo. There are no deep woods nearby, which accounts for the absence in summer of the Scarlet Tanager, Tufted Titmouse, Gnatcatcher, and other species loving seclusion. To get around the territory I have described in outline would require about an

hour and a half, making allowance for frequent stops. Often the writer would stay out but an hour, either going directly to the river, or walking around both lakes.

In gathering data for the study of the migration of birds, not only is sufficient time required, but it must be available daily, or better, morning and evening. Few persons are in a position to be able to give their time regularly to this study, or if they have time for it, their place of residence is not favorable for observations of bird life. The writer has been very fortunate in both these respects, living in such a place as he has described above, and having leisure through a large part of the day. For more than eleven years, season after season, he has gone forth to field and grove to renew his acquaintance with his many beautiful and tuneful feathered friends.

The migration of our birds has proved a most interesting, and in some phases, the most mysterious part of a bird's life. The many dates of arrival and departure of the different species have been compared, and in a considerable number of instances there was found marked irregularity for several seasons. How to account for this irregularity is the mysterious feature of migration. Sometimes it may be inclement weather that causes delay in the arrival of certain species; at other times the weather will be fine, but still the birds may not arrive earlier. Why do they not arrive earlier is an unanswerable question to the writer. And this element of mystery adds new interest to the study of ornithology.

The two seasons of migration—spring and autumn—afford unequal facilities for securing dates of migration, the latter season presenting more difficulties. In spring most of the birds are in song when they arrive; the trees are quite bare yet; and there is a tendency for all the species to delay more on their northward journey: but in autumn, the songs have nearly all died away; many species feed quietly in thick shrubbery; and often others quickly pass southward, fearful of mishaps to their young, which follow them in flocks. And I was told by a reliable ornithologist that there is not available any satisfactory data on the autumn migration of our birds. Here, then, is an unworked field for devoted students of bird life.

The migration and distribution of birds have elements of similarity, at least they need not present much difficulty to the student who tries to study them simultaneously. By recording all

the species seen, and by noting casually an approximate number of each species, any observer will soon learn the relative abundance at any season of the year of all the birds that come under his observation. By comparing his records and notes for several seasons, he will have a very adequate idea of the distribution of bird life in his own neighborhood. This totalling up of records for a number of years is, however, no light task; and in the writer's own experience, has proved veritable drudgery.

While studying the migration and distribution of birds, any observer will incidentally obtain a very fair knowledge of their habits—such as, nesting, bathing, feeding, and the call-notes and songs of birds. Perhaps the most interesting of a bird's habits is its nesting—so various are the nests and the ways and means that are taken to feed and protect the young birds. A typical crude nest is that of the Mourning Dove, while the most marvelous of birds' nests is the hang-nest of the Baltimore Oriole. Then there are the eggs, so variously colored that a set of them may be most beautiful. The feeding of the fledglings, their first attempt at flying, the anxiety of the old birds for the safety of their young, and many other interesting features of the nesting season, are inexhaustible subjects for study or pleasurable investigation.

Next to nesting, I think, the bathing habits of birds are most remarkable. Two general methods of bathing are observable—namely, wading into the water and plashing in it, and flying and dipping into the water. Most birds bathe in the first way, which is much the less interesting. To see a bird fly out over the surface of the water, and suddenly plunge into it—is a wholly surprising performance, even to the experienced observer; for there may be some particular circumstance of the action that is unusual—such as, the number of dips taken—at intervals or successively—the height from which the birds descends into the water, or some other curious element.

One of the most astonishing things that meets the eye of the keen observer is the readiness with which the young birds of a given species adopt the ways of their parents. To us who must be taught everything with the utmost pains, and who with long and careful training, only succeed in doing things clumsily, the alertness of birds to do as their parents is really a great wonder. When barely fledged, most birds begin to feed and fly, and bathe as they see the old birds do. The native power of young birds to

achieve approximately the facility of action of old birds of the same species is a notable point of observation in the study of bird life. This aspect is well illustrated in the case of the Nuthatch family, whose young can climb with almost the same cleverness as the old birds.

After the nesting season there follows a period that may not ineptly be called family days, when the young are more or less dependent on the old birds for food. Baltimore and Orchard Orioles, Bluebirds, Phoebes, Crested Flycatchers, Goldfinches, and many other species are seen in small flocks, which are undoubtedly birds of one or more broods. But the single families speedily grow into larger groups, which often comprise hundreds of the same species. Bronzed Grackles, Cowbirds, Martins, and others fill our fields, or groves, or the air with a multitude of living creatures. One of the most noteworthy sights in autumn is a large flock of Cowbirds flying, the males black and the females brown.

At all times, but especially during the nesting season, birds are exposed to many enemies. Among these are snakes, squirrels, birds of prey, and the domestic cat. Although snakes and squirrels destroy many eggs, it is mostly owls, crows, hawks, and cats that are the greatest destroyers of bird life. My own observations and those of my friends relate mostly to cats that roam at large. When these creatures find a nest, they will watch it persistently, and as the young birds fly weakly out, the cats will pounce upon them. One spring the entire brood of a Catbird was thus killed by a single cat at Notre Dame.

The enemies of birds naturally suggest the problem of their protection. No doubt nature's provision for the safety of all creatures is the most effective. But nature's conditions have been much altered by civilization, and this element has greatly added to the difficulties of conserving bird life and animal life. Artificial arrangements can not be adequately coped with by birds, and so man must step in and meet the adverse situation by special safeguards. More intelligent attention to this subject should be paid by all citizens, but by our State Audubon societies the more efficient protection of our birds should still be more carefully studied.

That birds should be helped to increase and become plentiful, both in town and country, needs no proof at all. The beauty of their bodies, their sweet strains in spring and summer, their use-

fulness in destroying harmful insects to trees and plants, are a few of the reasons why every man and woman should do his or her share in promoting schemes for the protection of our native birds. It seems incredible that there should be so much indifference to one of the most delightful features of the great out-of-doors—the intelligent enjoyment of bird life. But lamentable as this state of things is, let us not be discouraged. If the old are beyond reclamation in the matter of becoming interested in our birds, the young are never so. They but await the helpful word of their teachers or friends, to become life-long lovers of our many beautiful song birds.

Many American birds are strikingly beautiful. Among the most brilliant in plumage we may include the Scarlet Tanager, Rose-breasted Gorgebeak, Cardinal, Indigo Bird, Baltimore Oriole, Blackburnian Warbler, Redstart, and Red-headed Woodpecker. If these species were all seen together, they would make a wonderful collection. And any person who had never seen them before would say he had no idea that such beautiful wild birds were in existence. I remember once the surprise of a girl whose attention was called to a Scarlet Tanager. She could not believe that it was a wild bird, but thought it must have been an escaped cage-bird. The presence of these beautiful feathered creatures in our groves during the summer adds a new charm to their attractiveness.

Were our birds noted only for grace and beauty of form, they would be thrice welcome on their return to us each spring. Besides the exquisite colors of their coats, many of them are sweet-voiced, and make our groves and fields ring with their clear, liquid notes. What a chorus, never unappreciated by the bird lover, may be heard any morning in spring and early summer. The Song Sparrow, Warbling Vireo, Baltimore Oriole, Indigo Bird, Meadowlark, Bobolink, Catbird, and Brown Thrasher are songsters whose performances give the purest pleasure to every sympathetic student of nature. In all there are about forty species of song birds that may be heard in our part of the country, each with its own voice, which can be distinctly recognized.

The voice tones of birds may be musical or may lack that quality. A single note may suffice to determine to which class a given species may belong. Compare the utterances of the Wood Pewee and the Phoebe, and you will note the musical quality in the first and its absence in the second. Another difference between

song birds and most of those which have been denied this gift is that the former, although always singing in a minor key, yet modulate their voice sufficiently to make the song varied; while the latter usually have little range to their voice, and repeat the same unmusical note over and over again. It must be admitted, however, that a number of non-musical birds have remarkable power of voice expression. Who that has listened to Crows or Flickers, or certain other species will not say that they can vary their voices almost indefinitely? So in dividing birds into those which sing, and those which do not, the liquid quality of the notes, rather than the gift of variation, must differentiate the two classes.

I shall now attempt to describe, somewhat in detail, the qualities of bird utterance, dividing the subject into call-notes, songs, and unmusical notes. My purpose is to note such differences as will account for the classification of birds as either musical or non-musical. The two elements, as hitherto stated that will enter mostly into the discussion are variation and quality of tones. I shall also essay to outline what may be called the philosophy of bird utterance. This will consist in an analysis of the notes of birds, not only in relation to the quality and variety of their utterance, but also the motive or stimulus that is the source of the sounds to which birds give expression. In treating this aspect of my subject, I realize that my knowledge is too fragmentary to offer more than mere suggestions or conjectures.

Any one who has studied bird life long and carefully must have often wondered why birds have such a great variety of utterances. Broadly, these utterances may be divided into two kinds—songs and call-notes. Usually the latter are not musical, and this is probably the chief reason for distinguishing them from songs. However, in some species there is no melodious quality either in the call-note or the song. On the other hand, a few species have no call-note that is not musical.

Another interesting thing to the lover of birds is the impulse that causes them to utter their notes. Does a bird sing because it feels joyous? All utterance whether rational or otherwise is, I think, the expression of an inward feeling, either of pleasure or pain. If this is true, then the songs of birds must, from their pleasantness, testify to a sensation of pleasure. And when the observer hears a song repeated continuously through a long summer

day, he must feel certain that the warbler is in a state of exuberant joyousness.

But why is there such a variety of notes in the many common birds of our woods and fields? Each species has voice qualities that are distinct from any other, and even individuals of the same species often manifest great powers of variation in their singing. Speaking generally, I think a bird's song is an inherited gift in this sense, that the elementary powers of utterance are possessed by the bird but depend for development on association with the parent birds.

This development of song power may be noticed in young birds during the period that follows the nesting season, when families of birds wander about for food. Better still in our groves, during July and August, such species as the Bluebird and Baltimore Oriole are common, and here their notes may be heard, especially early in the morning or in the evening. Hearing these notes so frequently, an ear accustomed to distinguish the utterances of birds will readily recognize that efforts of the young birds are characterized by a lack of both sustained execution and of fullness of voice expression.

In some species the most prominent feature of the song is the quality of the notes, which may have but little variety and yet be very pleasing. Such a species is the Bluebird. In others the notes may be clear, but unless the performance is notably fine, the total effect of the song is disappointing. This fact may be easily observed in the Song Sparrow. In judging of a bird's powers of song the quality of the notes seems to weigh most in the mind of the observer. Very often a note will have scarcely any variation, and yet be indescribably sweet or plaintive.

Two species that are notable for great variety in their singing are the Brown Thrasher and the Catbird. There is also considerable similarity in their songs, the Thrasher's performance, however, being easily distinguished by its greater strength and more marked pauses. In some respects the Catbird's song is the more pleasing, for what it lacks in force of expression it makes up in the sweetness of its strain.

The Catbird suggests a faculty that is most remarkable in this species—the power of imitation. Probably this is not an uncommon endowment in many species, and may account for peculiarities of individuals that are noticed in their manner

of singing. No doubt environment plays an important part in the acquisition of new notes in any species, but the degree of assimilation is most dependent on native faculty. In the Catbird this faculty seems more evident than in any other of our northern birds. So accomplished is this species that it can imitate the full song of other species. I remember on one occasion of hearing a Catbird, in full view, singing like a Robin.

Those who spend much time in the country or other places where birds are abundant must have been struck by the frequent occurrence of the same note in many species. Often, too, a single sweet note will be repeated over and over again, a fact that reiterates the truth that repetition is an element of adequate appreciation in other than human expression. Sometimes this repetition of one note reveals more clearly the sweetness of a bird's notes than does its full song. I recall as an example of this the Orchard Oriole.

In some species the notes are very limited in range, but some variety is obtained by a skilful management of the voice. Should the elementary sound be sweet, the bird may succeed in giving it a number of pleasing turns; or the quality of the notes may be so agreeable that the observer will listen eagerly to the oft-repeated, sweet strain. Perhaps no common species is so conspicuous for this habit as the Field Sparrow. Now and again I have heard one whose powers of song, within the limits described above, were remarkably fine.

Our birds may be divided into two general classes—musical and non-musical. Why are all of them not musical? Well, one may as well ask, why are not all birds non-musical? Some have received the gift of song as an endowment, while others have not received this gift. But even those that are not called song birds may have notes that are more or less pleasing. Of course this quality would suffer by comparison with those species whose songs are clearly sweet; but when a bird's notes are judged on their own merits, after frequent and long acquaintance, we will certainly admit that somehow we like them.

There is always in the observer of bird life a subjective feeling that will materially affect his appreciation of the songs of birds. A species that is heard very frequently, like the song sparrow, will—from this very frequency, and not for any intrinsic quality of the song—be regarded with unwonted affection.

And other circumstances connected with this same species—such as, its early arrival, and its long song season—will add to one's preference for the bird. Again some circumstance not at all connected with a bird's life may often make the observer regard its singing as joyous or as most plaintive. An example of this subjective attitude would be some great personal sorrow occurring during a time when a bird's song was heard daily. Still another proof of the power of suggestion will be found in the opposite effect that some bird's song may have on different persons. I remember once asking my mother whether she thought the notes of the Field Sparrow were plaintive. Her answer was that to her they seemed cheery.

Besides their songs all birds have brief call-notes that may or may not be musical—usually they are not. Although these call-notes are seldom of the same quality as the song, yet they are sometimes very striking. Who that has heard in some deep wood the unique call of the Sacrllet Tanager will deny that it is very pleasing? Another species whose call-note I have always liked is the Yellow-throated Vireo. But it must be admitted that many species of birds have call-notes that are harsh and scolding. I recall a good example of this in that charming songster the Warbling Vireo.

There is in call-notes a very striking feature that deserves special study on the part of students of bird-life—this is the remarkable power of expression which many species possess in their call-notes. During the nesting season, or when the young have been lately fledged, the old birds will often utter notes of evident alarm or of wild excitement. I remember—after the report of a gun, and the loud yelping of a dog that was shot—hearing a most piercing cry come from a Spotted Sandpiper, the bird taking flight immediately. Another species whose voice has wonderful flexibility is the Crow. One August afternoon, I remember the cawing of many Crows in different parts of a deep wood and was struck by the remarkable variation of each bird's utterance.

An example of a bird whose call-notes may be termed musical is the Goldfinch. I know of no other species that has a greater variety of pleasing notes. To me there is one quality in the notes of the Goldfinch that is unequalled by any other species—this is delicacy; and this quality is most evident in one of the bird's common call-notes. In its more ambitious attempts at singing—

in which its notes somewhat resemble those of the Canary—the Goldfinch often introduces its call-note—not at all to the detriment of the song. When many Goldfinches sing together in the tree-tops, the effect of the song is most pleasing; and perhaps a feature of the singing that adds rather than detracts, from the total effect of the song is the fact that the birds lack loudness in their utterance.

My rather ambitious attempt to give a philosophy of bird utterance may have led the reader to expect something more satisfying than I have been able to offer. Still I hope I have put down my ideas clearly, and that they are not altogether commonplace. Ten years of daily observation have revealed many interesting facts about the notes of our birds, and if I have not done better in my attempted analysis of their utterance, it is, I think, mainly due to lapses of memory. Unless the observer takes copious notes when out-of-doors, he will surely omit much in any effort to describe in detail the almost endless variation, at different seasons of the year, of the utterance of our birds. Hence the thoughts I have set down are more or less of a tentative character which longer experience, and greater efforts to secure the most complete knowledge attainable, may materially modify.

This paper has already grown to a great length; and lest a bird lover's enthusiasm lead me to trespass further on the patience of my readers, I shall end with a brief summary of my subject. It has been my purpose to outline my method of studying ornithology, and to indicate roughly the results of eleven years of daily observation of bird life. I realize that in my attempt to set down in a general way the various aspects of bird life, I have not maintained a unity of plan that the thoughtful reader would expect to find. I may remind him, however, that in an article that purports merely to introduce the subject, variety rather than unity, will be most in evidence. The longest part of the present article has dealt with the notes of birds, because both the writer and the general reader are probably most interested in the songs of birds. I may be pardoned, I am sure, if I venture, as a bird lover, to hope that what I have written will awaken a little more interest and even some enthusiasm in a branch of natural history that is steadily gaining in importance both in school curricula and in nature lover's clubs. It is certain that the next generation will not be indifferent to the varied and abundant bird life of our woods and fields,